Example 2

The volume of a cylindrical tank below is 1540litres. Use it to answer the questions that follow.

Work out the radius of the cylinder

1 litre = $1000cm^3$

1540litres = $(1540 \times 1000)cm^3$

1540litres = $1,540,000cm^3$

$V = \pi r^2 h$

$1540000 = \frac{22}{7} r^2 \times 100$

$1540000 = \frac{2200}{7} r^2$

$7 \times 1540000 = \frac{2200r^2}{7} \times 7$

$\frac{7 \times 1540000^{700}}{2200_1} = \frac{2200r^2}{2200}$

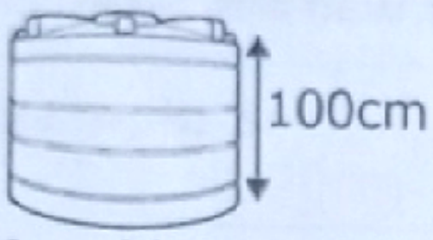
$7 \times 700 = r^2$

$\sqrt{4900} = \sqrt{r^2}$

$r = 70cm$

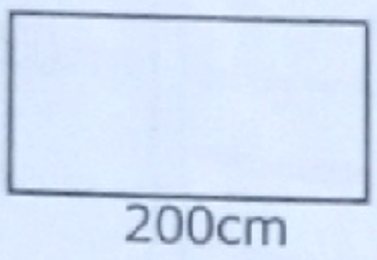
Activity 9:46

1. The volume of a tin is $9420cm^3$. If the radius is 10cm, find its height. (Take $\pi = 3.14$)
2. The volume of a cylindrical tank is 88litres of milk.
   a) Find the radius of the tank if the height is 70cm.
   b) If each litre cost shs.1200, how much money can be collected from the milk?
3. The figure below is a cylindrical tank containing 1549litres of water.



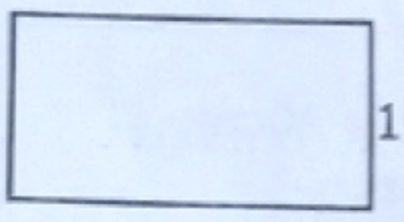
   a) Find the radius of the tank.
   b) If the volume is $\frac{4}{5}$ full, find its capacity.

4. A welder used the rectangular sheet measuring 200cm by 88cm as shown below to make a cylinder of height 200cm. Use it to answer the questions that follow.(2018)



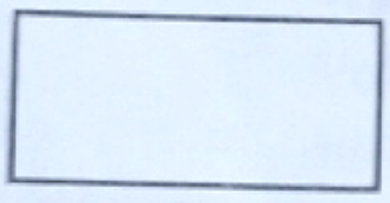
   a) Work out the radius of the cylinder.
   b) Calculate the volume of the cylinder

5. The figure below shows a rectangular sheet of metal. The sheet is curved to form the wall of a cylindrical tank whose height is 100cm.



   a) Find the volume of the tank formed. ($\pi = \frac{22}{7}$)
   b) Calculate the area of the sheet needed to cover the base the tank.
   c) Calculate the capacity of the tank.

6. A rectangular sheet below is made into a cylindrical tin whose height is 30cm.



   a) Find the diameter of the tin. (Take $\pi = \frac{22}{7}$)
   b) Calculate the area of sheet needed to cover the base of the tank.
   c) Calculate the volume of the tank.